Attachment 9 – Program Preferences

Introduction

The IRWM Program was conceived and developed to integrate the water management efforts of neighboring, and often competing or disconnected stakeholders. Before a discussion of the Program Preferences and Statewide Priorities, this is an appropriate location to discuss how the Kings Basin Water Authority (KBWA) is different than other regions in the Hydrologic region and throughout the State.

1. **Stakeholder Involvement.** The Authority now has 54 stakeholders actively involved in the KBWA. This region is not just made up of a few major water purveyors, but rather a wide cross-section of stakeholders representing varied interests. Water Districts, cities of different size, community service districts, DACs, conservation trusts, water advocates, private water companies, environmental interests, and others have come together to provide a truly integrated group of stakeholders that are actively and frequently meeting together.
2. **Governance.** As described in Attachment 1, the formation of the Joint Powers Authority established a formal governance structure that now manages the IRWMP. The formal structure developed a Board, established an Advisory Committee that allows DACs and other entities to participate without a funding commitment, and developed various workgroups to focus on carrying out the objectives of the IRWMP. The Authority and its committees meet at least quarterly. Agenda and minutes of these meetings are not included in this application, but are readily available at the Authority's website, http://www.krcd.org/water/ukbirwma/index.html.
3. **Outreach.** Even prior to the formation of the Authority, the region has focused on spreading the word about the IRWM process, plan, goals and projects. Representatives of the Authority have diligently pursued opportunities to reach out to the community at large, as well as potential members. Websites, press releases, community speaking engagements, stakeholder presentations and site tours have been utilized to reach out to the region.
4. **DAC Involvement.** The Authority has actively worked to ensure DACs inclusion within the planning process. The very formation of the Authority includes provisions for DACs to have direct and official involvement through the formation of the Advisory Committee. DAC involvement and projects are included in the IRWMP and a listing of the current efforts is included in Attachment 10.
5. **Proven Track Record.** The Authority and its project proponents have proven that the region can implement projects and programs with and without DWR grant funding. The Authority has implemented several of the objectives and projects identified in the IRWMP. Recently, the Authority has successfully implemented studies and construction projects as proposed and on schedule. In consideration of geographic balance points, we believe that our recent funding success and contracting will help to ensure that this grant is implemented successfully.

6. **History.** Working together since 2001, the Kings Basin region has developed into a truly integrated and collaborative effort focused on achieving the goals and objectives identified in the IRWMP. The commitment and longevity of the participants help to further and extend the efforts considered by the region.

The six projects included in this application promote the Program Preferences defined in the State's Public Resources Code and California Water Code in addition to the Statewide Priorities identified for the IRWM Grant Program. A summary table listing the five projects and the corresponding Program Preferences and Statewide Priorities is included as **Table 11-1** on the following page. Descriptions of how each project promotes these Program Preferences and Statewide Priorities are discussed below.

Program Preferences

Regional Project or Programs

The Southwest Groundwater Banking Project would create a new water supply, averaging 5,500 AF/year, that would be available on the market for water agencies within the Kings River region. Fresno Irrigation District and James Irrigation District would not be the only beneficiary of this new water supply. Water transfers and sales would likely occur between FID/JID and other irrigation districts and municipalities in the Kings Basin.

The three agencies installing water meters, City of San Joaquin, City of Kerman, and Bakman Water Company, have signed a Letter of Intent to cooperate, share information and ideas, and attempt to purchase meters in bulk to reduce costs. This essentially creates a regional water meter project that involves multiple agencies and spreads benefits throughout the Kings Basin.

The Recharge Basin 11 Project was initially identified through a regional groundwater recharge study by the North Fork Group, an informal subdivision the Kings River Conservation District. This group includes eight local irrigation districts and canal companies located in the North Fork of the Kings River. Through public outreach efforts, Laguna Irrigation District has gained support for the project from numerous agencies including the eight members of the North Fork Group, Liberty Canal Company, Liberty Water District, Riverdale Public Utilities District, the City of Lemoore and others. These public outreach efforts are documented in the project feasibility study. Nine agencies have also provided letters of support for the project. These agencies support the project because recharged groundwater will not just benefit Laguna Irrigation District, but also flow westerly to many other agencies in the Kings Basin.

Table 11-1 Program Preferences Summary

Project	Program Preferences							Statewide Priorities							
	Regional Project or Program	Integrate WMPs and Projects w/in Hydrologic Region	Effectively Resolve Water-Related Conflicts w/in or Between Regions	Contribute to Objectives of CALFED Bay-Delta Program	Address Critical Water Supply or Quality Needs of DACs	Integrate Water Management w/ Land Use Planning	SWFM Funding: Provide Multiple Benefits	Drought Preparedness	Use & Reuse Water More Efficiently	Climate Change Response Actions	Expand Environmental Stewardship	Practice Integrated Flood Management	Protect Surface Water & GW Quality	Improve Tribal Water & Natural Resources	Equitable Distribution of Benefits
Southwest Groundwater Banking Project (Fresno ID)	X	X	X	X				X	X	X	X	X			
Recharge Basin 11 (Laguna ID)	X	X	X	X				X	X	X	X	X	X		X
Water Supply Reliability and Conservation Project (Bakman Water Company)	X	X	X		X	X		X	X	X	X		X		X
Water Supply Reliability and Conservation Project (City of San Joaquin)	X	X	X	X	X	X		X	X	X	X				X
Residential Water Meter Project (City of Kerman)	X	X	X			X		X	X	X	X				X

Integrate water management programs within a hydrologic region

The Kings Basin IRWMP covers the area of the Kings Groundwater Sub-basin, which is defined by the California Department of Water Resources as a distinct hydrologic region. All of the proposed project fall in this region and all will benefit the Kings Basin. Each of the proposed projects has benefits to groundwater overdraft either through groundwater recharge, groundwater banking, or reduced pumping from water conservation. Groundwater overdraft has been identified as one of the principal problem in the Kings Basin and the IRWMP set a goal of eliminating the overdraft in 20 years. The five proposed projects will mitigate overdraft by 9,500 AF/year, and make a significant contribution towards improving groundwater conditions in the hydrologic region.

Effectively resolve significant conflicts within or between regions

The Kings Basin has been in a state of overdraft for many years. The region relies on surface water and groundwater, but surface supplies are limited and groundwater demand exceeds the safe yield. Average annual overdraft in the Kings Groundwater is estimated to be 120,000 to 150,000 AF. This has caused conflicts among water users for many years. In a region of groundwater overdraft, any reduction in groundwater pumping is a positive step toward resolving water-related conflicts. The three water meter projects will each conserve water and reduce groundwater overdraft. The FID project and LID project will both recharge significant volumes of water and help mitigate groundwater overdraft.

Contribute to CAL-FED Bay-Delta Program Objectives

The CAL-FED Bay-Delta Program Objectives aim to improve water quality, water supply, ecosystem restoration, and levee integrity in the Bay-Delta system.

The Recharge Basin 11 project and Southwest Groundwater Banking Project will both make a minor contribution to improving levee integrity in the Delta. The projects will divert Kings River floodwater that has historically flowed past the James Bypass. These waters have entered the San Joaquin River and flowed to the Delta. By diverting these waters, flood flows and flood water levels will be lower in the Delta, thus reducing the risk of levee failures.

The City of San Joaquin water meter project will conserve water, reduce groundwater pumping, and increase groundwater reserves. The James Irrigation District will benefit from 1,400 AF/year of water recharged in their District through the Southwest Groundwater Banking Project. The City of San Joaquin is an enclave in the James Irrigation District, and the two agencies share the same groundwater supply. The James Irrigation District (JID) has a Central Valley Project (CVP) contract (No. 14-06-200-700L) for up to 35,300 AF/year that is typically delivered from the Delta through the Delta-Mendota Canal. If local groundwater reserves increase then JID may reduce their dependency on Delta water, and the impacts from Delta water curtailments will be less severe.

Critical Water Supply and Needs for DACs

The projects proposed by Bakman Water Company and the City of San Joaquin will both address critical water supply needs for DACs.

Bakman Water Company is proposing to install wellhead treatment on an out-of-service well. This will provide a new water source for Bakman. This well water is low in nitrate levels and will be blended with another well that is high in nitrate concentrations. The treatment and blending components of the project will provide higher quality drinking water to the Company's customer base. The project will also improve water reliability and increase redundancy in the local water system.

The City of San Joaquin proposes to rehabilitate a well that is out of service due to E. coli contamination. This will improve the City's pumping capacity which is currently inadequate to meet pressure requirements at peak usage periods, and cannot meet State fire flow requirements. Increasing the well capacity is a critical water supply need in the City of San Joaquin.

Integrate water management programs with land use planning

All regional projects involving the Kings Basin Water Authority are developed to meet established urban and metropolitan water management plan objectives. These water management plans are consistent with the goals of the California Water Plan and several other statewide and regional plans. Most local land use plans include water conservation components including guidelines and requirements. The three water meter projects (Kerman, San Joaquin and Bakman) effectively integrate water management with land use planning. Conservation is also critical to allow the limited water supply to meet the demands associated with existing land use plans.

Statewide Priorities

Drought Preparedness

The Kings Groundwater Basin practices conjunctive use by necessity. Surface water supplies cannot meet all demands even in normal water years. Surface water storage is very limited in droughts and the groundwater aquifer must be tapped to prevent crop losses and ensure adequate water for municipalities. Mitigating groundwater overdraft is important to help ensure there are adequate groundwater reserves in prolonged droughts.

The Southwest Groundwater Banking Project will recharge, on average, 5,500 AF/year. This water will be stored and available for pumping in dry years. The Recharge Basin 11 project will recharge, on average, 2,650 AF/year and increase groundwater reserves that can be pumped by local growers in dry years.

The three water meter projects (San Joaquin, Kerman and Bakman) will each reduce groundwater pumping and increase groundwater reserves. Through the installation of meters,

and by utilizing volumetric billing rates, water demands are expected to decrease by 20%. This will also provide an extra supply that can be tapped in dry years and protect the local economies.

Overall, the five projects will increase groundwater reserves by an estimated 9,500 AF/year. This water will be available in dry years, as well as periods with reduced water allocations due to environmental concerns.

Use and Reuse Water More Efficiently

The three proposed water meter projects will provide incentives for water users to conserve water. Water will be billed on a volumetric rate and consequently water usage is expected to decrease by 20%. This will result in more efficient use of urban water supplies.

The Recharge Basin 11 project will recharge Kings River floodwater that would normally leave the Kings Basin and ultimately flow to the Delta or ocean. The project is estimated to capture an average of 2,650 AF/year. This will provide a more efficient use of local water resources.

The Southwest Groundwater Banking Project will recharge on average 5,500 AF/year. This will include Kings River floodwater that typically flows out of the area, urban stormwater that is often considered a nuisance, and Kings River Fish flows, that are available in certain times of the year when demands are low. As a result, the project will capture and reuse waters that would otherwise be lost to the region.

Climate Change Response Action

Climate change in the Kings Basin could result in earlier snowmelt, more rain on snow events, more flood releases, and higher peak flows on the Kings River. As a result, the region may see earlier and more frequent flood releases. The Recharge Basin 11 Project and Southwest Groundwater Banking Project will both capture Kings River floodwater and help to adapt to these changes.

Climate change could also result in changes in the seasonality of precipitation, less reliable water supplies, and changes in temperatures and cloud cover that inhibit local cloud seeding operations. These could all result in more frequent droughts. The water conservation, groundwater recharge and groundwater banking components of the projects will improve resiliency and help to adapt to climate change induced droughts.

The proposed projects will also help to reduce greenhouse gas emissions. The Recharge Basin 11 project will raise groundwater levels, and is expected to reduce CO_2 emissions by 126 metric tons/year (179,000 kwh). The Southwest Groundwater Banking Project is also expected to raise groundwater levels and reduce CO_2 emissions by 349 tons/year (495,000 kwh)The three water meter projects will reduce water demands by 20%, which will reduce energy demands and greenhouse gas emissions by 20%.

The Kings Basin IRWMP identifies several strategies for adapting to climate change. Some of these strategies include: 1) Improve water use efficiency, 2) Encourage conservation, 3) Develop groundwater recharge and banking projects, and 4) Increase ability to capture floodwater. The five proposed projects are consistent with these strategies.

Expand Environmental Stewardship

The Recharge Basin 11 Project and Southwest Groundwater Banking Project will create a combined 110-acres of temporary habitat for a variety of wildlife. Benefits will include:

- Creation of waterfowl, upland, wetland and aquatic habitat
- Resting, roosting, nesting, drinking, and foraging habitat for waterfowl, shorebirds, resident and migratory birds and a variety of other wildlife
- Waterfowl habitat for bird species on the Pacific flyway
- Water supply for terrestrial wildlife
- Varying water depths that provide a variety of habitat environments for different species, including foraging areas for waterfowl, shorebirds, and other wildlife.
- Reduction in fugitive dust and pesticide applications from changing the land use from agriculture to recharge basins

The Recharge Basin 11 Project will also include the following features that will improve wildlife habitat:

- Flat Levee Slopes. Interior levee slopes will be 5H: 1V, which will promote the growth of native wetland and upland vegetation to provide wildlife habitat.
- Interior Levees. The interior levee for the settling channel will provide semi-isolated habitat and safer conditions from predation.

These two projects will significantly improve habitat for wildlife in the area, which has been highly disturbed for many years due to agricultural activity.

All five projects will reduce groundwater demands or mitigate groundwater overdraft. This could help reduce demands on surface water and promote environmental stewardship.

Practice Integrated Flood Management

The Recharge Basin 11 Project will have the capacity to divert up to 70 cfs of floodwater. Average annual floodwater diversions are estimated to be 2,650 AF. In very wet years, when flood water is available for over six months, water diversions could be as high as 11,000 AF. This will reduce water levels and peak flows on the Kings River during flood periods, and thereby potentially reduce flood damage.

The Southwest Groundwater Banking Project will also divert Kings River floodwater, as well as urban stormwater, for part of its water supplies. Total water diversions are estimated to average 5,500 AF/year. This will make a significant contribution towards flood control on the Kings River, and control urban stormwater in the Fresno metropolitan area.

Protect Surface Water and Groundwater Quality

The Recharge Basin 11 Project will recharge high quality Kings River water in an area with known groundwater quality problems including elevated levels of nitrates and arsenic. Recent water quality data shows that Kings River water has superior quality, while the groundwater often exceeds the maximum contaminant levels (MCLs) for drinking water standards. Through blending and dilution the groundwater quality is expected to improve.

The area served by Bakman Water Company is threatened by numerous groundwater plumes. Some of these plumes are stable but increased groundwater pumping can cause them to migrate from remedial operations and enter drinking water supplies. The proposed water meters will reduce water demands and groundwater pumping. This will help to stabilize the groundwater gradients and help assure containment of the plumes. This will also help to protect public health, secure water supplies, and reduce the need for groundwater treatment at currently untreated wells.

Ensure Equitable Distribution of Benefits

This grant application includes projects for two disadvantaged communities: the City of San Joaquin, and portions of the City of Fresno in Bakman Water Company. The Kings Basin Water Authority has made it a priority to include and encourage the participation of small and disadvantaged communities with the IRWM process. The Authority takes special measures to send letters out to disadvantaged communities throughout the IRWM region to notify them of IRWM process and progress.

The City of San Joaquin and Bakman Water Company both propose projects that address critical water quality and water supply problems at their wells. These projects will include well rehabilitation, wellhead treatment, and blending that will help to provide safe, clean and affordable water supply to two vulnerable DACs. The City of San Joaquin and Bakman Water Company also propose water meter installations. If these projects are funded it will reduce the financial burden placed on the local water customers to pay for the meters.

Most of Laguna Irrigation District landowners receive surface water deliveries. However, the Recharge Basin 11 Project is being constructed in a 1,235-acre area of Laguna Irrigation District that lacks infrastructure to receive surface water. As a result, groundwater overdraft in this area is higher than the rest of the District. The project will benefit an area that lacks the benefit of a surface water supply, thus providing more equitable benefits to all LID water users.

Lastly, the five proposed project are spread throughout the IRWMP area, helping to ensure that benefits are distributed geographically.